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SPRUCE BUDWORM
CONTROL PLAN FOR 1952
IN
OREGON AND WASHINGTON

Prepared by

NORTHWEST FOREST PEST ACTION COMMITTEE
(Formerly Spruce Budworm Action Committee)

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SPRUCE BUDWORM CONTROL PLAN FOR 1952 IN OREGON AND WASHINGTON

INTRODUCTION

The Northwest Forest Pest Action Committee (formerly Spruce Budworm Action Committee) has analyzed the spruce budworm situation in Oregon and Washington and submits the following plan for control in 1952. The plan closely follows the pattern set by the highly effective projects of 1949 through 1951. The proposed program is a continuation of the effort to halt the most widespread epidemic of a forest defoliator ever recorded in these two states.

The Committee recognizes that a much larger control program might be undertaken in 1952. However, the accomplishments to date and the current status of infestation indicate that the attainable objectives of artificial control should soon be achieved. Now the problem is largely one of cleaning up the remaining critically infested areas and keeping the budworm in check until natural control becomes effective. Accordingly the Committee recommends that artificial control be kept to the minimum compatible with protecting the sprayed areas and preventing losses on the seriously infested unsprayed areas.

* * *

The Action Committee is composed of representatives of the following organizations:

Oregon State Board of Forestry
Keep Oregon Green Association
Tree Farm Management Service of Oregon
Oregon Extension Service
Associated Forest Industries of Oregon
Washington State Division of Forestry
Keep Washington Green Association
Farm Bureau of Washington
Washington Forest Fire Association
City of Walla Walla, Washington
Industrial Forestry Association
Western Pine Association
Western Forest Industries Association
U. S. Forest Service
U. S. Indian Service
U. S. Bureau of Plant Industry
U. S. Bureau of Land Management
U. S. Bureau of Entomology and Plant Quarantine

CONTROL ACCOMPLISHMENTS

The control of the spruce budworm on the most critical areas of epidemic infestation in Oregon and Washington has been accomplished through three cooperative aerial spraying projects in 1949, 1950, and 1951. Detailed accomplishments are as follows:

(1) A total of 2,128,000 acres of the most critical areas of epidemic infestation has been treated.

(2) The acreage of completely dead timber resulting from defoliation by the spruce budworm has been confined to approximately 9000 acres. The build-up of tree killing bark beetles in trees attacked by the budworm also has been kept to a minimum.

(3) The acreage of "heavy" epidemic infestations has been reduced from 887,000 acres in 1949 to 82,000 acres in 1951.

(4) The epidemic has been kept from spreading extensively in the valuable fir forests of western Oregon in spite of a strong tendency for the budworm to increase on unsprayed areas.

(5) Valuable watersheds have been protected and a potentially great fire hazard averted.

The highlights of the three control projects that have been completed are as follows:

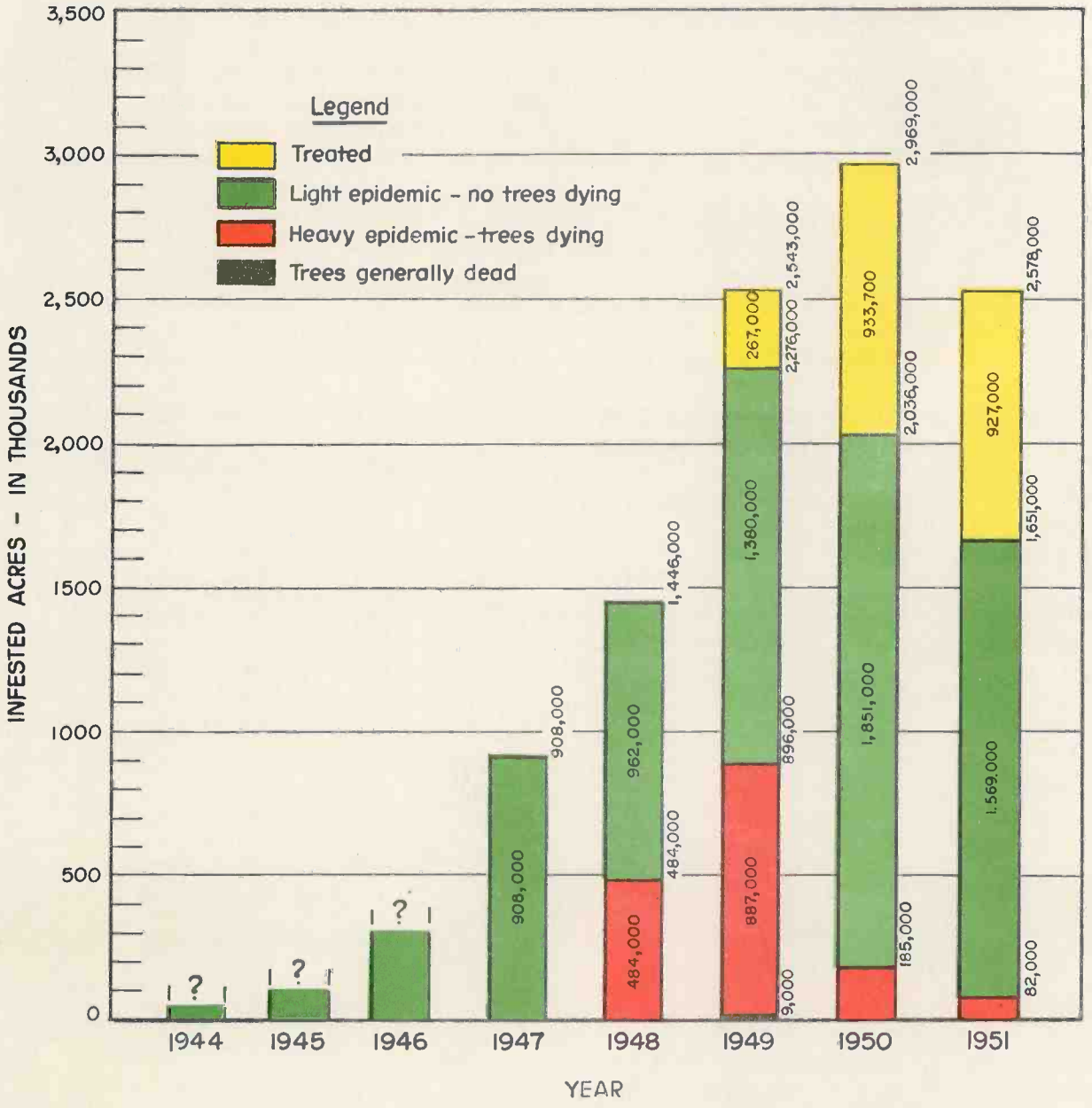
1949 Project - A total of 267,000 acres of the most threatening budworm infestations in Oregon was successfully sprayed at an average cost of $1.20 per acre. Mortality of the budworm following spraying was approximately 97 per cent. In western Oregon the epidemic was halted on the area sprayed. In the eastern Oregon Cascades the control work was somewhat less effective because federal funds were not appropriated in time to do a fully satisfactory job. As a result, some subsequent re-spraying was necessary on this latter area.

1950 Project - In the spring of 1950 nearly 934,000 acres of the most critical areas of budworm infestations in Oregon and Washington were treated at an average cost of $1.06 per acre. The average kill of the budworm on these areas was 99 per cent.

1951 Project - In June and July of 1951, some 927,000 acres of epidemic infestations were treated in Oregon and Washington at an average cost of $1.06 per acre. An average mortality of 98 per cent of the budworm larvae was obtained on the sprayed areas.

Graph I

PROGRESS OF SPRUCE BUDWORM EPIDEMIC
IN OREGON AND WASHINGTON



CURRENT BUDWORM SITUATION

The detection and mapping of epidemic infestations of the spruce budworm in Oregon and Washington was a major part of the survey program of 1951 which covered practically all of the forested land in these two states. This was the fifth in a series of annual cooperative surveys of the budworm situation. Over 22,000 air miles were flown in 221 hours of flying time during the 1951 survey. The areas of epidemic infestation by the budworm were mapped from the air according to degree of defoliation and later checked by ground crews. Private, state and federal foresters and entomologists, numbering 123, spent 399 man-days in examining 3,474 ground plots for presence or absence of the budworm on non-epidemic areas.

While the results of the 1951 survey have been presented in a recent report 1/, the findings with respect to the spruce budworm are resummarized in Table 1 of the present report by states, areas, control units and degree of infestation in order to orient the control recommendations.

Epidemic infestations of the spruce budworm were found to total 1,650,600 acres in 1951, as compared to a total of 2,037,890 acres in 1950. The intensities of the infestations in 1951 were classified as 1,039,680 acres (63.0%) light, 529,200 acres (32.1%) moderate, and 81,720 acres (4.9%) heavy. The extent of the 1951 infestations and a comparison with those of 1950, by areas and by states are as follows:

Area	1951	1950
Blue Mountains - Oregon Area	1,329,480 acres	1,514,710 acres
Blue Mountains - Washington Area	182,880 "	295,520 "
Eastern Oregon Cascades Area	77,440 "	107,540 "
Western Oregon Area	56,960 "	93,320 "
Eastern Washington Cascades Area	3,840 "	26,800 "
Total	1,650,600 acres	2,037,890 acres
Total for Oregon	1,463,880 acres	1,715,570 acres
Total for Washington	186,720 "	322,320 "
Total	1,650,600 acres	2,037,890 acres

1/ Report of Forest Insect Detection Surveys in Oregon and Washington, Season of 1951. Compiled by Oregon State Board of Forestry and Bureau of Entomology and Plant Quarantine. November 15, 1951.

RECOMMENDATIONS FOR 1952

Considering the success of the spruce budworm control program to date and the current status of the outbreak, the Committee recommends the treatment of 639,800 acres of epidemic infestation in 1952. The Committee recognizes that a larger control project would be administratively possible. However, in view of the present character of the infestation and the possibility that natural control factors may soon terminate the budworm outbreak, the Committee feels that there is ample justification for not spraying the entire epidemic acreage at this time.

Areas to be Treated

In considering the areas and units in need of protection in 1952, the Committee felt that the control program should be confined to:

(1) Centers of new epidemic infestation in the western Oregon area and in the eastern Oregon Cascade area which might serve as sources of infestation in these localities.

(2) Centers of heavy epidemic infestation in the Blue Mountains area of both Oregon and Washington on which the trees are in poor vigor as a result of repeated defoliations and hence are subject to extensive killing either by additional defoliation or by the attacks of bark beetles.

(3) Centers of epidemic infestation near or adjacent to the control units of 1950 and 1951, which if left untreated, might reinfest the units already brought under control.

The project proposed for 1952 covers 9 of the 24 infestation units recorded during the 1951 survey. Conditions on the control units are discussed in the section of this plan entitled Control Unit Data. A detailed breakdown of the proposed control program is given by units and by ownerships in Table 2. The following brief table summarizes the project by states by ownerships:

Oregon		
Federal	370,660 acres	(72.8%)
Private	137,740 "	(27.0%)
State and County	840 "	(0.2%)
Total for Oregon	509,240 acres	(100%)
Washington		
Federal	99,560 acres	(76.3%)
Private	24,000 "	(18.3%)
State and County	7,000 "	(5.4%)
Total for Washington	130,560 acres	(100%)
Total Federal	470,220 acres	(73.5%)
Total Private	161,740 "	(25.3%)
Total State and County	7,840 "	(1.2%)
Total	639,800 acres	(100%)

Apportionment of Costs

It is proposed to apportion the 1952 costs by essentially the same formula that was used in 1951. The formula to be applied in 1952 is as follows:

1. Federal Government:
   (a) To pay the full cost of treating lands under federal jurisdiction: National Forest, Public Domain, Oregon and California Revested Lands, and Indian and Tribal lands.
   (b) To contribute 25 per cent of the cost of treatment of privately-owned lands in both Oregon and Washington.

2. State of Oregon:
   (a) To pay the total cost of treating state, county and minicipally-owned lands in Oregon.
   (b) To contribute 37½ per cent of the cost of treatment of privately-owned lands in Oregon, as provided for by the State Legislature.

3. State of Washington:
   (a) To pay the full cost of treating state, county and municipally-owned lands in Washington.
   (b) To contribute 50 per cent of the cost of treatment of privately-owned lands in Washington, as provided for by the State Legislature.

4. Private Owners in Oregon:
   To pay 37½ per cent of the cost of treatment of privately-owned lands in Oregon.

5. Private Owners in Washington:
   To pay 25 per cent of the cost of treatment of privately-owned lands in Washington.

The cost of the 1952 spruce budworm control project in keeping with the above apportionment and computed at an estimated $1.30 per acre is shown in detail in Table 3. Briefly, the over-all costs are as follows:

Federal	
For federal lands	$610,386
For private lands	52,565
Total Federal Funds Required	$662,951
State of Oregon	
For state and county lands	$ 1,092
For private lands	67,149
Total State Funds Required	$ 68,241
State of Washington	
For state, county and municipal lands	$ 9,100
For private lands	15,600
Total State Funds Required	$24,700
Private Owners	
For private lands in Oregon	$ 67,148
For private lands in Washington	7,800
Total Private Funds Required	$ 74,948
TOTAL COST OF 1952 PROJECT	$830,840

For the first time in the history of the spruce budworm control program, funds are available to permit orderly planning and execution of the control work. Federal funds for spruce budworm control were appropriated in July 1951 for the fiscal year ending June 30, 1952. State funds in both Oregon and Washington for insect control work in 1952 were appropriated by the respective state legislature over a year ago. Private owners have continually expressed their interest and support in the control program. Their support for the 1952 program is assured.

Project Administration

The pattern of project administration and technical supervision that has been developed and thoroughly tested in the years 1949 through 1951 has given efficient, practical and economical control on 2,128,000 acres. The Committee endorses what has been done and recommends that the 1952 project be administered in similar fashion. Specifically the Committee recommends: (1) That the Bureau of Entomology and Plant Quarantine again be responsible for the supervision, coordination and inspection of all technical phases of the 1952 project; and (2) That the administrative responsibility again be divided between the U. S. Forest Service and the State of Oregon, as shown in detail in Table 4 and in summary in the following table:

		Percent of Total Ownership		
Agency	Total Acres	Federal	State	Private
U. S. Forest Service	280,560	88.8	2.5	8.7
State of Oregon	359,240	61.6	0.2	38.2
Total	639,800	73.5	1.2	25.3

The Committee urges the agencies responsible for carrying out the project to exercise every effort to keep costs at the lowest possible level compatible with safe and effective control.

Research

The need for adequate research on the entomological as well as the operational phases of the present spruce budworm control program is recognized. Through cooperative research in 1948 a successful and economical method of controlling the spruce budworm under forest conditions was developed. Each year from 1949 through 1951, cooperative projects have been conducted to improve the control method and to reduce costs. Far less emphasis has been given to the entomological aspects of this problem. A start was made in 1950 and greatly expanded in 1951 to gather data on the life history of the budworm, factors influencing natural control, and the rate of infiltration of the budworm into sprayed areas. The Committee strongly recommends a continued and expanded program of research aimed at final solution of the spruce budworm problem in Oregon and Washington.

CONTROL UNIT DATA

The nine units proposed for spraying in 1952 are discussed below and are shown on the accompanying map. Degree of infestation, acreages, ownerships, spraying costs and administration of the proposed 1952 project are given in Tables 1 to 4. Numbers in the unit headings refer to the unit designations on the map and in the tables. For information on the units not scheduled for control in 1952, refer to the survey report of November 15, 1951.

Western Oregon Area

In contrast to previous years, during which spruce budworm outbreaks were detected around Roseburg, Eugene, McKenzie Bridge, Oakridge and Sisi Butte, only one unit of light epidemic infestation, totalling 56,960 acres was recorded in the entire western Oregon area in 1951. Thus, the control strategy of blocking out and treating all epidemic centers of budworm infestation, regardless of intensity, has kept the outbreak from spreading extensively in the highly valuable fir stands of western Oregon and also has prevented appreciable damage to the timber on the treated areas. The control work that has been done to suppress the budworm in western Oregon is as follows:

Year	Acreage Treated
1949	160,234
1950	119,730
1951	161,919
1952	73,000 estimated

The Committee feels that the expenditures for control in western Oregon have returned their value many times over and that the current policy on this area should be continued. Accordingly it is recommended that all epidemic infestation, plus a suitable buffer zone, be treated in 1952 to suppress the outbreak on the one remaining control unit.

(1) Willamette Unit: The Willamette Unit consists of one large center and two small centers of epidemic infestation, mostly in the South Fork McKenzie River drainage and sandwiched between units treated in 1950 and 1951. The total area proposed for treatment in 1952 is 73,000 acres, of which 56,960 acres are light epidemic and 16,040 acres are buffer zone. Except for a few acres of private ownership included in the buffer zone, the ownership is practically 100 per cent federal. It is recommended that the control work in 1952 be administered by the U. S. Forest Service.

The value of the timber on and adjacent to this unit is very great. It is estimated that the stands within the unit will average about 40,000 board feet per acre. Using a conservative figure of $15.00 per thousand board feet, the stumpage value of the infested timber is about $34,000,000. Far greater values exist in the surrounding timber that also is threatened should the outbreak escape control.

It is of paramount importance to the lumber industry and the communities of the Willamette Valley that this epidemic be controlled just as soon as possible. The completion of the proposed project should, for all practical purposes, accomplish this objective.

Eastern Oregon Cascades Area

Epidemic infestations of the spruce budworm in the eastern Oregon Cascades Area, recorded during the 1951 survey, totalled 77,440 acres. This infestation was again centered on the Mt. Hood and Deschutes National Forests and the Warm Springs Indian Reservation (see map). The Committee feels that control measures in 1952 are warranted on only three centers totalling 56,800 acres, plus a suitable buffer zone around these centers. It is proposed to spray a total of 77,000 acres in 1952, of which 55,200 acres are classified as light epidemic, 1,600 acres heavy epidemic, and 20,200 acres are buffer zone. The ownership is 52.0 per cent (40,000 acres) Indian or Tribal, 47.4 (36,520 acres) National Forest, and 0.6 per cent (480 acres) private. For administrative purposes, the three centers of infestation should be considered as one control unit during the actual spraying operations and administered by the U. S. Forest Service.

The control work that has been done to suppress the budworm on the eastern Oregon Cascades area is as follows:

Year	Acreage Treated
1949	106,000
1950	40,338
1951	160,554
1952	77,000 estimated

The volume of Douglas fir and true fir on the centers of infestation averages about 5,000 board feet per acre. At a conservative value of $4.00 per thousand board feet, the estimated value of the timber within the control unit is about $1,500,000.

(2) Mt. Hood Unit: Epidemic infestations of the spruce budworm on the Mt. Hood Unit in 1951 consisted of two centers totalling 22,560 acres and classified as 20,960 acres of light and 1,600 acres of heavy. A buffer zone of 14,440 acres has been added to block up these centers, making a total of 37,000 acres to be treated in 1952. The ownership is 98.7 per cent (36,520 acres) federal and 1.3 per cent (480 acres) private. The northern center of infestation is in the Hood River Valley and joins the timber stands treated during the 1951 project. The other center of infestation extends into the Warm Springs Indian Reservation and is part of the area treated in 1949. In that year, federal funds were long delayed and before they became available a fairly high percentage of the budworm larvae transformed to the pupal stage (which is not affected by the treatment). The surviving budworm population has increased until now it is necessary to respray this portion of the forest to prevent extensive tree mortality and to reduce the threat of infestation to the stands in western Oregon.

(3) Warm Springs Unit: Two centers of light epidemic infestation totalling 34,240 acres on the Warm Springs Indian Reservation are recommended for control during the 1952 project. One center is a continuation of the Mt. Hood infestation and is part of the area treated in 1949, while the second center lies between two centers included in the 1951 project. The ownership is entirely Indian or Tribal. It is proposed to include a buffer zone of 5,760 acres around the visibly infested areas which will make a total of 40,000 acres to be treated in 1952.

Blue Mountains, Oregon, Area

As in other years, the Blue Mountains, Oregon, Area contains more acres of spruce budworm epidemic infestation than all other areas combined. A total of 1,329,480 acres of epidemic infestation was recorded in this area during the 1951 surveys. The control work that has been done to suppress the budworm in the Blue Mountains of Oregon is as follows:

Year	Acreage Treated
1950	747,781
1951	479,164
1952	359,240 estimated

The control strategy recommended by the Committee for the Blue Mountain area has been to treat those stands in which extensive tree mortality was in progress or imminent within one year. Thus, control measures were withheld until 1950, when it was decided that further defoliation by the budworm on certain critical areas could not be risked. While the projects of 1950 and 1951 have effectively controlled the budworm on the most critically infested areas, populations of the spruce budworm have continued to develop to light epidemic status over most areas not included in the control plan. This entire infestation has been carefully checked from the air and on the ground on an annual basis and only those stands which showed actual or threatening losses have been treated.

In keeping with this policy, the Committee recommends that a total of 359,240 acres of epidemic infestation on this area be treated in 1952. This infestation is found in four control units and is classified as 310,640 acres of light and 48,600 acres of heavy defoliation. The ownership is 61.6 per cent (221,140 acres) federal, 38.2 per cent (137,260 acres) private, and 0.2 per cent (840 acres) state or county.

On the basis of an average of 5,000 board feet per acre and a conservative value of $4.00 per thousand board feet, the stumpage value of the infested timber in this unit is over $7,000,000.

It is recommended that all control work in the Blue Mountains, Oregon, Area in 1952 will be under the administration of the Oregon State Board of Forestry.

(6) Waterman Unit: Although control measures were recommended for this unit in 1951, no treating was carried out because of an apparent decrease in budworm population prior to the start of the control operations. However, the outbreak did not actually subside and epidemic infestations totalling 41,000 acres were recorded in this unit during the 1951 survey. Because of the expressed interest on the part of private owners, control measures are recommended for 1952. Approximately 41,000 acres are set up for control in 1952, of which 18,000 acres are lightly infested and 23,000 acres heavily infested. The ownership is 100 per cent private.

(14) Minam Unit: Epidemic infestations of the spruce budworm, totalling 70,880 acres and joining the Minam Unit sprayed during the 1951 project are being recommended for control in 1952. This current infestation was also present in 1951 but was eliminated from the project in the hope that natural control factors would become effective before direct treatment was needed. Such has not been the case and the Committee recommends the treatment of 70,880 acres in 1952. This infestation is classified as 45,280 acres light and 25,600 acres heavy. The ownership is 85.3 per cent (60,480 acres) federal, 14.4 per cent (10,200 acres) private, and 0.3 per cent (200 acres) state or county.

(18) Day Ridge Unit: A total of 31,840 acres of light epidemic infestation, of which 65.7 per cent (20,920 acres) is in federal ownership and 34.3 per cent (10,920 acres) is in private ownership in the Day Ridge country of Wallowa County is recommended for control in 1952. The present unit joins the Day Ridge Unit of 1950 and is an extension of the large Elgin Unit discussed below. It should be treated in 1952 in order to eliminate this narrow belt of infestation while it is of small size and to block up the Elgin Unit.

(19) Elgin Unit: Control measures on the Elgin Unit were strongly recommended by the Committee as part of the 1951 project; however, the entire unit of 209,440 acres had to be eliminated because of lack of federal funds. The 1951 survey showed that the acreage of epidemic infestation had increased slightly and that the intensity of the infestation had decreased slightly. Through these sustained defoliations, the trees over most of the unit are being severely weakened and considerable numbers of them are being killed by bark beetles. In order to forestall possible widespread mortality in these valuable stands of Douglas fir and true fir, the Committee again recommends control measures on the Elgin Unit. It is proposed to treat 215,520 acres, all of light epidemic infestation, of which 64.8 per cent (139,740 acres) are in federal ownership, 34.9 per cent (75,140 acres) are in private ownership, and 0.3 per cent (640 acres) are in state or county ownership.

Blue Mountains, Washington, Area

Epidemic infestations of the spruce budworm in the Blue Mountains, Washington, Area are a continuation of those in the Oregon portion of the Blue Mountains but are considered separately for administrative reasons. Control of these infestations has been governed by the same principles established for the Oregon area. The control work that has been done to suppress the budworm in the Blue Mountains of Washington is as follows:

Year	Acreage Treated
1950	25,853
1951	115,672
1952	130,560 estimated

Two units of epidemic infestation, totalling 130,560 acres, are recommended for control in 1952. The value of the infested timber in the two units is over $2,600,000, on the basis of 5,000 board feet per acre and a conservative value of $3.00 per thousand board feet. However, these figures do not portray the full value of these forests. Watershed protection, recreational and other values must also be considered. The infestation to be treated in 1952 has been classified as 107,360 acres of light epidemic and 23,200 acres of heavy epidemic. The ownership is about 76.3 per cent (99,560 acres) federal, 18.3 per cent (24,000 acres) private, and 5.4 per cent (7,000 acres) state or county. The treatment of these two units in 1952 should, for all practical purposes, complete the control program in the Blue Mountains, Washington, Area.

It is recommended that the control work on this area in 1952 be administered by the U.S. Forest Service.

(22) Touchet Unit: This unit contains 35,360 acres of light epidemic infestation mostly in the East Fork Touchet River drainage, and is an expansion of the Walla Walla Unit treated during the 1951 project. The ownership is 86.1 per cent (30,440 acres) federal, 12.2 per cent (4,320 acres) private, and 1.7 per cent (600 acres) state or county. The treatment of this unit in 1952 is necessary to block up this portion of the forest and to prevent reinfestation of the areas already treated.

(23) Anatone Unit: Epidemic infestations totalling 95,200 acres, of which 72,000 are light and 23,200 acres are heavily defoliated, make up the Anatone Unit proposed for treatment in 1952. The ownership is 72.6 per cent (69,120 acres) federal, 20.7 per cent (19,680 acres) private, and 6.7 per cent (6,400 acres) state or county. This infestation has been present for several years but the intensity of the defoliation has now increased to a point where control measures should be undertaken to prevent loss of timber. When this unit has been completed, there will be no other stands in this portion of the Umatilla National Forest which will require treatment, unless reinfestation occurs.

TABLE 1. SUMMARY OF 1951 SPRUCE BUDWORM EPIDEMIC IN OREGON AND WASHINGTON

AREAS AND UNITS	Infested Acreage				Spraying Schedule	
	Light Epidemic (Acres)	Heavy Epidemic (Acres)	Buffer Zone (Acres)	Total (Acres)	1952 (Acres)	Residue (Acres)
Western Oregon Area						
(1) Willamette	56,960		16,040	73,000	73,000	
Eastern Oregon Cascades Area						
(2) Mt. Hood	20,960	1,600	14,440	37,000	37,000	
(3) Warm Springs	34,240		5,760	40,000	40,000	
(4) Deschutes	20,640		16,760	37,400		37,400
Total	75,840	1,600	36,960	114,400	77,000	37,400
Blue Mountains-Oregon Area						
(5) Ochoco	85,760			85,760		85,760
(6) Waterman	18,000	23,000		41,000	41,000	
(7) Malheur	142,400			142,400		142,400
(8) Susanville	18,880			18,880		18,880
(9) Dale	23,520			23,520		23,520
(10) Powder River	6,080			6,080		6,080
(11) La Grande	41,120			41,120		41,120
(12) Starkey	212,640			212,640		212,640
(13) Eagle Creek	24,960			24,960		24,960
(14) Minam	45,280	25,600		70,880	70,880	
(15) Joseph	106,240			106,240		106,240
(16) Snake	183,040			183,040		183,040
(17) Chesnimnus	78,240	8,320		86,560		86,560
(18) Day Ridge	31,840			31,840	31,840	
(19) Elgin	215.520			215,520	215.520	
(20) Wenaha	39,040			39,040		39,040
Total	1,272,560	56,920		1,329,480	359,240	970,240
TOTAL FOR OREGON	1,405,360	58,520	53,000	1,516,880	509,240	1,007,640
Blue Mountains-Washington Area						
(21) Saddle Mountain	52,320			52,320		52,320
(22) Touchet	35,360			35,360	35,360	
(23) Anatone	72,000	23,200		95,200	95,200	
Total	159,680	23,200		182,880	130,560	52,320
Eastern Washington Cascades Area						
(24) Wenatchee	3,840		5,440	9,280		9,280
TOTAL FOR WASHINGTON	163,520	23,200	5,440	192,160	130,560	61,600
GRAND TOTAL	1,568,880	81,720	58,440	1,709,040	639,800	1,069,240

TABLE 2. PROPOSED 1952 SPRUCE BUDWORM CONTROL PROJECT BY OWNERSHIPS

Areas and Control Units	FEDERAL					STATE & COUNTY		PRIVATE		GRAND TOTAL
	National Forest (Acres)	Public Domain & O&C (Acres)	Indian and Tribal (Acres)	Total (Acres)	Percent of Total	State and County (Acres)	Percent of Total	Private (Acres)	Percent of Total	Grand Total (Acres)
WESTERN OREGON AREA										
(1) Willamette	73,000			73,000	100.0					73,000
EASTERN OREGON CASCADES AREA										
(2) Mt. Hood	36,520			36,520	98.7			480	1.3	37,000
(3) Warm Springs			40,000	40,000	100.0					40,000
Total	36,520		40,000	76,520	99.4			480	0.6	77,000
BLUE MOUNTAINS - OREGON AREA										
(6) Waterman								41,000	100.0	41,000
(14) Minam	60,200	280		60,480	85.3	200	0.3	10,200	14.4	70,880
(15) Day Ridge	20,920			20,920	65.7			10,920	34.3	31,840
(19) Elgin	139,340	400		139,740	64.8	640	0.3	75,140	34.9	215,520
Total	220,460	680		221,140	61.6	840	0.2	137,260	38.2	359,240
TOTAL FOR OREGON	329,980	680	40,000	370,660	72.8	840	0.2	137,740	27.0	509,240
BLUE MOUNTAINS - WASHINGTON AREA										
(22) Touchet	30,400	40		30,440	86.1	600	1.7	4,320	12.2	35,360
(23) Anatone	68,880	240		69,120	72.6	6,400	6.7	19,680	20.7	95,200
TOTAL FOR WASHINGTON	99,280	280		99,560	76.3	7,000	5.4	24,000	18.3	130,560
GRAND TOTAL	429,260	960	40,000	470,220	73.5	7,840	1.2	161,740	25.3	639,800

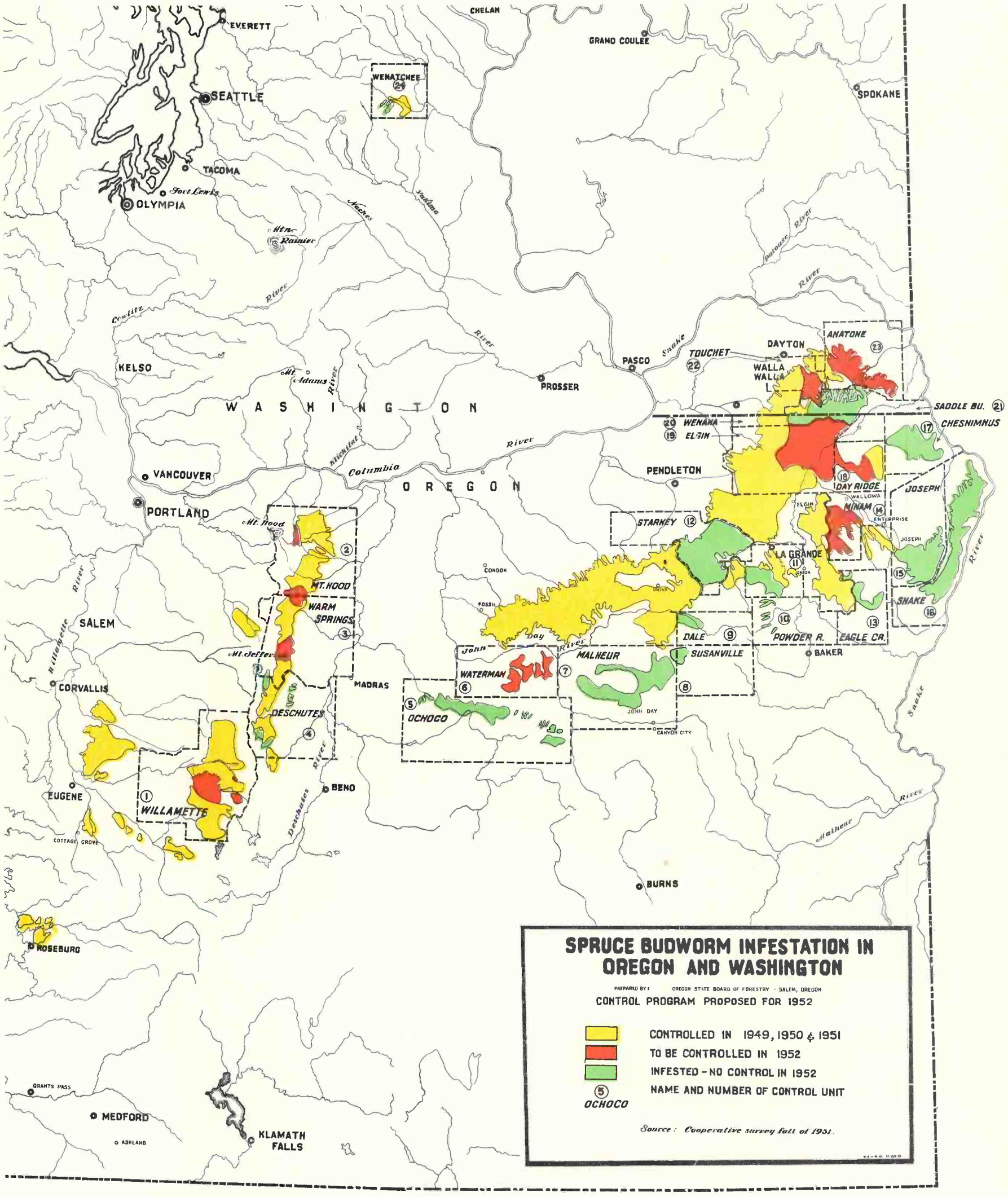
TABLE 3 PROPOSED APPORTIONMENT OF COSTS FOR 1952 SPRUCE BUDWORM CONTROL PROJECT

AREAS AND UNITS	FEDERAL COSTS For U. S. Lands (100%)	FEDERAL COSTS For Private Lands (25%)	FEDERAL COSTS Total	STATE COSTS* For State and County Lands (100%)	STATE COSTS* For Private Lands (37½%)	STATE COSTS* Total	PRIVATE COSTS* For Private Lands (37½%)	GRAND TOTAL
WESTERN OREGON AREA								
(1) Willamette	$94,000		$94,000					$94,000
EASTERN OREGON CASCADES AREA								
(2) Mt. Hood	$47,476	$156	$47,632		$234	$234	$234	$48,100
(3) Warm Springs	52,000		52,000					52,000
Total	$99,476		$99,632		$234	$234	$234	$100,100
BLUE MOUNTAINS - OREGON AREA								
(6) Waterman		$13,325	$13,325		$19,988	$19,988	$19,987	$ 53,300
(14) Minam	$78,624	3,315	81,939	$260	4,973	5,233	4,972	92,144
(15) Day Ridge	27,196	3,549	30,745		5,323	5,323	5,324	41,392
(19) Elgin	181,662	24,420	206,082	832	36,631	37,463	36,631	280,176
Total	$287,482	$44,609	$332,091	$1,092	$66,915	$68,007	$66,914	$476,012
TOTAL FOR OREGON	$480,958	$44,765	$525,723	$1,092	$67,149	$68,241	$67,148	$661,112
BLUE MOUNTAINS - WASHINGTON AREA								
(22) Touchet	39,572	1,404	40,976	780	2,808	3,588	1,404	45,968
(23) Anatone	89,856	6,396	96,252	8,320	12,792	21,112	6,396	123,760
TOTAL FOR WASHINGTON	$129,428	$7,800	$137,228	$9,100	$15,600	$24,700	$7,800	$169,728
GRAND TOTAL	$610,386	$52,565	$662,951	$10,192	$82,749	$92,941	$74,948	$830,840

* In Oregon, The State pays for 37½% of the cost of treating private lands and private owners pay 37½%.
In Washington " " " 50% " " " " " " " " " " " " 25%.

TABLE 4 PROPOSED ADMINISTRATION OF 1952 SPRUCE BUDWORM CONTROL PROJECT

ADMINISTRATIVE AGENCY	CONTROL UNITS	FEDERAL ACREAGE	PERCENT OF TOTAL	STATE & COUNTY ACREAGE	PERCENT OF TOTAL	PRIVATE ACREAGE	PERCENT OF TOTAL	TOTAL ACREAGE
U.S. Government	(1) Willamette	73,000	100.0					73,000
" " "	(2) Mt. Hood	36,520	98.7			480	1.3	37,000
" " "	(3) Warm Springs	40,000	100.0					40,000
" " "	(22) Touchet	30,440	86.1	600	1.7	4,320	12.2	35,360
" " "	(23) Anatone	69,120	72.6	6,400	6.7	19,680	20.7	95,200
	TOTAL ACRES	249,080	88.8	7,000	2.5	24,480	8.7	280,560
State of Oregon	(6) Waterman					41,000	100.0	41,000
" " "	(14) Minam	60,480	85.3	200	0.3	10,200	14.4	70,880
" " "	(15) Day Ridge	20,920	65.7			10,920	34.3	31,840
" " "	(19) Elgin	139,740	64.8	640	0.3	75,140	34.9	215,520
	TOTAL ACRES	221,140	61.6	840	0.2	137,260	38.2	359,240
GRAND TOTAL		470,220	73.5	7,840	1.2	161,740	25.3	639,800



SPRUCE BUDWORM INFESTATION IN OREGON AND WASHINGTON

PREPARED BY: OREGON STATE BOARD OF FORESTRY - SALEM, OREGON

CONTROL PROGRAM PROPOSED FOR 1952

- CONTROLLED IN 1949, 1950 & 1951
- TO BE CONTROLLED IN 1952
- INFESTED - NO CONTROL IN 1952
- (5) OCHOCO — NAME AND NUMBER OF CONTROL UNIT

Source: Cooperative survey fall of 1951.

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